

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 9516-086-228	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/US03/11325	International filing date (<i>day/month/year</i>) 13 April 2003 (13.04.2003)	(Earliest) Priority Date (<i>day/month/year</i>) 06 November 2002 (06.11.2002)
Applicant CELGENE CORPORATION		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☒ Certain claims were found unsearchable (See Box I).

3. ☒ Unity of invention is lacking (See Box II).

4. With regard to the title,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the abstract,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No. _____



as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.



None of the figures

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International application No.

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Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claim Nos.: 8,25,35 and 39
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
under Article 17(2)(b) because of defects under Article 17(2)(a).
3. ☐ Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-7, 9-17, 22-24 and 26-31, interferon alpha and formula 1

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

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International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C07D 209/34; A61K 38/21, 38/19

US CL : 514/416; 424/85.7, 85.4

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 514/416; 424/85.7, 85.4

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,698,579 A (MULLER G.W.) 16 December 1997, see entire document.	1-7, 9-17, 22-24, 26-31
Y	SILVER, R.T. Interferon-Alpha 2b A New Treatment for Polycythemia Vera. Annals of Internal Medicine. 01 December 1993, Vol. 119, No. 11, pages 1091-1092, see entire document.	1-7, 9-17, 22-24, 26-31
Y	SCHANDENE et al. Interferon Alpha Prevents Spontaneous Apoptosis of Clonal Th2 Cells Associated with Chronic Hypereosinophilia. Blood. 15 December 2000, volume 96, No. 13, pages 42875-4292, see entire document.	1-7, 9-17, 22-24, 26-31
Y	HAO et al. Expression of Interferon Consensus Sequence Binding Protein (ICSBP) is Downregulated in Bcr-Abl-Induced Murine Chronic Myelogenous Leukemia-Like Disease, and forced Coexpression of ICSBP Inhibits Bcr-Abl-Induced Myeloproliferative Disorder. Molec. Cell. Biol. February 2000, Vol. 20, No. 4, pages 1149-1161, see entire document.	1-7, 9-17, 22-24, 26-31
Y	VACCA et al. Angiogenesis in Hematologic Malignancies. Haematologica. 12-14 November 2001, Vol. 86, Suppl 1 to No. 11, pages 1-5, see entire document.	1-7, 9-17, 22-24, 26-31

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

07 April 2004 (07.04.2004)

Date of mailing of the international search report

22 JUN 2004

Name and mailing address of the ISA/US

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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CANEPA et al. Antitumor Activity of Thalidomide in Idiopathic Myelofibrosis. Haematologica. 12-14 November 2001, Vol. 86, Suppl 1 to No. 11, pages 12-14, see entire document.	1-7, 9-17, 22-24, 26-31
Y	PRUNERI et al. Angiogenesis in Myelodysplastic Syndromes. Br. J. Cancer. 1999, Vol. 81, No. 8, pages 1398-1401.	1-7, 9-17, 22-24, 26-31
Y	LUNDBERG et al. Bone Marrow in Polycythemia Vera, Chronic Myelocytic Leukemia, and Myelofibrosis Has an Increased Vascularity. Am. J. Pathol. July 2000, Vol. 157, No. 1, pages 15-19.	1-7, 9-17, 22-24, 26-31

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BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

I. Group 1, claim(s) 1-7, 9-17, 22-24, 26-31, first appearing cytokine inhibitor of Formula I, and first appearing second agent interferon-alpha, drawn to methods of treating, preventing or managing a myeloproliferative disease by administering a selective cytokine inhibitor.

Groups 2-11, and 11 more second agents (see claim 9).

Group 12, claim(s) 1-7, 9-15, 18-19, 22-24, 26-31, second appearing cytokine inhibitor of Formula II, and first appearing second agent interferon-alpha, drawn to methods of treating, preventing or managing a myeloproliferative disease by administering a selective cytokine inhibitor.

Groups 13-23, and 11 more second agents (see claim 9).

Group 24, claim(s) 1-7, 9-15, 20-24, 26-31, third appearing cytokine inhibitor of Formula III, and first appearing second agent interferon-alpha, drawn to methods of treating, preventing or managing a myeloproliferative disease by administering a selective cytokine inhibitor.

Groups 25-36, and 11 more second agents (see claim 9).

II. Group 37, claim(s) 32-34 and 36, and first appearing second agent interferon-alpha, drawn to a selective cytokine inhibitory composition.

Groups 37-48, and 11 more second agents (see claim 36).

III. Group 49, claim(s) 37-38, 40, drawn to a kit comprising a selective cytokine inhibitor and an agent that suppresses blood cell production.

IV. Group 50, claim(s) (39)-40, drawn to a kit comprising a selective cytokine inhibitor and any of numerous second agents.

Continuation of B. FIELDS SEARCHED Item 3:

SCIRUS

Search Terms: cytokine, inhibitor, myelo?

NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under Article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the *PCT Applicant's Guide*, a publication of WIPO.

In these Notes, "Article," "Rule" and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

What parts of the international application may be amended ?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Preliminary Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When ? Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments ?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How ? Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments ?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.